

AMENDMENTS TO THE CLAIMS

The following claim listing is to replace all prior versions, and listings, of claims in the application.

LISTING OF THE CLAIMS:

Claim 1. (Currently Amended): An isolated *Marchantiales*-derived gene that hybridizes under stringent conditions with all of or part nucleic acid having at least 90% identity to the nucleotide sequence of SEQ ID NO: 1 or a complementary sequence thereof, [[and]] wherein said gene the nucleic acid encodes a protein having $\Delta 6$ fatty acid desaturating activity.

Claim 2. (Currently Amended): The isolated [[gene]] nucleic acid of claim 1, wherein said gene (a) the nucleic acid consists of [[a]] the nucleotide sequence of SEQ ID NO: 1, or (b) hybridizes under stringent conditions to SEQ ID NO: 1 or a complementary sequence thereto.

Claim 3. (Currently Amended): The isolated [[gene]] nucleic acid of claim 1, wherein said gene (a) comprises a the nucleic acid consists of the nucleotide sequence of nucleotides 253 to 1698 of SEQ ID NO: 1, or (b) hybridizes under stringent conditions to a nucleotide sequence comprising nucleotides 253 to 1698 of SEQ ID NO: 1, or a complementary nucleotide sequence thereto.

Claim 4. (Currently Amended): An isolated gene encoding a Marchantiales-derived protein having $\Delta 6$ fatty acid desaturating activity, wherein said protein has an The isolated nucleic acid of claim 1, wherein the nucleic acid encodes a protein having the amino acid sequence of SEQ ID NO: 2, or wherein said gene encodes a protein with an having the amino acid sequence that has been modified by substitution, deletion, insertion, and/or addition of one or more to ten amino acids of SEQ ID NO: 2.

Claims 5-17. (Canceled).

Claim 18. (Currently Amended): A recombinant expression vector ~~which comprises a gene comprising the isolated nucleic acid~~ of claim 1.

Claim 19. (Currently Amended): A non-human transformant comprising [[a gene]] the isolated nucleic acid of claim 1.

Claim 20. (Currently Amended): A plant ~~into which a gene expressing the isolated nucleic acid of claim 1 is expressed~~, a progeny of the plant, a vegetatively propagated plant ~~having the same characteristics of the plant~~, or a tissue of the plant, ~~wherein the isolated nucleic acid of claim 1 is expressed in the progeny, the vegetatively propagated plant, or the tissue~~.

Claim 21. (Currently Amended): [[A]] The plant of claim 20, wherein said plant has a modified fatty acid composition, a progeny of the plant, a vegetatively propagated plant having the same characteristics from the plant, or a tissue of the plant, wherein the progeny, the vegetatively propagated plant, or the tissue expresses the isolated nucleic acid of claim 1.

Claim 22. (Canceled).

Claim 23. (Currently Amended): A method of producing fatty acids comprising growing [[a]] the plant of claim 20 and obtaining said fatty acids from said plant or plant tissue.

Claim 24. (Canceled).

Claim 25. (Currently Amended): A method of modifying a fatty acid composition comprising expressing [[gene]] the isolated nucleic acid of claim 1.

Claims 26-28. (Canceled).